

ing new lamps along 'our own trail, the out trail.' So long as there is life there will be sickness and suffering and need for the educated physician. May the heritage which we received from the men who 'bulk big on the old trail' be cherished and enriched, while in our possession, and passed on to those who come after us 'unimpaired in dignity, honor, and usefulness.'"

THE EFFECTS OF LIGHT AND PHOTOTHERAPY

The beneficial effects of phototherapy have been attributed to a variety of factors ranging from the definitely physiological to the indefinite and psychological. Objectively the effects of light have been referred to changes in reflexes, cutaneous nerves, the blood, the general metabolism, etc. Pigmentation of the skin has been regarded as both beneficial and detrimental. There are those who have repudiated certain practices of phototherapy while acclaiming other practices with no better foundation. Investigations of physiologists have been as unsatisfactory as the opinions of clinicians. Probably insufficient attention to accuracy of dosage and inadequate controls have been at the bottom of the varied notions about the physiological action of light. These deficiencies apparently have been met in the recent investigations of Reed of the University of Chicago, who reports rather uniform and interesting results on the action of light in animals.

Using beams of light of from 100 to 1250 f. c., practically devoid of ultra-violet rays, which were projected into the eyes of dogs, Reed demonstrated a definite though variable and progressive fall of blood pressure. In general the percentage fall increased with the duration of exposure, reaching ultimately the shock level at the end of from three to four hours. The heart was generally irregular. Since the same changes occurred after section of the optic and vagus nerves, they were not of reflex origin nor due to central vagus stimulation. The changes still occurred after paralysis of the vagi endings. Extract of the optic nerves and retina caused no such effects. However, the coagulation of blood was increased, and therefore there were definite changes in this circulating tissue.

This was proven to be the case by irradiation of blood alone which was caused to pass through a quartz tube connected to a carotid artery. The returning irradiated blood caused the same changes in blood pressure as did the light in the eyes, and the coagulation increased so rapidly that it was necessary to employ the anti-coagulant, heparin, in order to carry the experiments to successful completion. This direct irradiation of the blood resulted in increases in its uric acid content up to 38 per cent, the blood at the same time appearing darker and sedimenting more rapidly than before. There was no doubt, therefore, of the physical and chemical changes in the blood, and Reed suggests that these changes are fundamentally the basis of the physiological effects of light.

Although Reed made no studies of the capillaries directly or of changes in blood volume, the blood pressure changes observed by him must be relegated to some alteration (probably increase) in the permeability of these vessels. The altered permeability

of the capillary endothelium is apparently due to or associated with the physicochemical changes in the blood. Such a change in the capillaries and blood of the skin exposed to light would not be surprising, but it required a careful analysis on Reed's part, going from one factor to another, to arrive at a satisfactory conclusion.

This view of the action of light suggests a close analogy to the action of arsenic, a capillary poison, and the therapeutic benefits from and deleterious effects of this drug bear a similarity to those of light. Reed's demonstration of the physical and chemical changes in irradiated blood emphasizes the need of closer attention to the relatively unseen and small, if not hidden, things whose importance is increasing daily not only in phototherapy, but also in other branches of medicine.

Reed, C. I.: *Am. J. Physiol.*, 1925, 74:511, "Studies on the Physiological Action of Light. II. Depression of Arterial Blood Pressure."

Reed, C. I.: *Ibid.*, p. 518, "III. Effects on Arterial Blood Pressure of Direct Irradiation of Blood in Vivo."

Koch, F. C. and Reed, C. I.: *Ibid.*, 1926, 75:351, "V. Increase in Uric Acid in Blood Irradiated Directly."

DRUG ADDICTS AND DRUG ADDICTION

The Patient and the Disease: Thoughts on Causes, Consequences, and Cures

A recent decision of the Supreme Court of the United States intimating that the Harrison Narcotic Law might be in danger if an appropriate test case were brought before that body; the activities of the Narcotic Committee of the American Medical Association; the increasing importance being given the subject by many organizations; and the consequent renewed interest of the daily and periodic press, all seem to point to the approach of a wave of aroused public opinion in the narcotic situation.

In California the commendable activities of the Narcotic Committee authorized by the last legislature under the chairmanship of Senator Sanborn Young, aided by committees from medical associations, women's clubs and civic organizations, have intensified local interest.

In view of these facts and the certainty that the question will be an active one before the next session of the legislature, and because many physicians and other interested citizens who have read some of my brief discussions of certain phases of the narcotic situation have asked for a fuller statement, an editorial in this and two subsequent issues of California and Western Medicine will be devoted to a discussion of drug addicts and drug addiction.

These editorials will be brought together in a reprint, copies of which may be had for the asking.—EDITOR.

I

If the growth of the drug evil is to be arrested, policies must be revised and action predicated upon certain immutable natural laws and painful facts. We must first of all accept the fact that narcotics are "one way out," a solace to the footsore, weary, and downtrodden; mitigators of physical, mental, and moral suffering; conscience-deadeners for those who are haunted by the "still small voice"; bracers and nerve chargers for weaklings, wrongdoers, and criminals.

We must admit that narcotics stand pre-eminent among useful drugs in the intelligent relief of suffering and treatment of diseases; that drug addiction in persons otherwise reasonably healthy is not particularly difficult to cure; that in difficult problem addicts their drug disease is almost invariably but one of their several troubles, and that to cure them of their addiction alone is but to remove one weed from a garden of weeds.

Drug addicts, when considered from the angles of prevention and management, logically fall into major and more or less distinctive groups of those who: (1) Are

otherwise physically, mentally, and socially solvent; (2) have one or more physical infirmities of consequence; (3) are mentally infirm or defective; (4) are socially and morally insolvent or defective; (5) combine in themselves the handicaps of two or more of these groups; or, (6) are incurably infirm, degenerate, criminal, or dangerous. There are, of course, varieties and grades among persons in each of these groups, and unfortunately a discouraging number of them drift eventually into the class of the hopelessly infirm, criminal, degenerate, or dangerous.

II

Drug addiction among otherwise reasonably sound citizens is a disease quite as effectively handled as are other diseases, and by the same machinery of health service. We cannot expect it to be better handled than are tuberculosis, cancer, syphilis and many other diseases, any one of which is vastly more destructive of health, happiness, and life than is drug addiction among this class of people. Such persons usually acquire their habit pretty much as other habits are acquired—by imitating associates. A few are unavoidably made—and usually cured, even before they are aware of their affliction—by physicians in the legitimate treatment of the sick. Many youths experiment with these dangerous drugs to satisfy the same curiosity that leads them to experiment with tobacco—a curiosity incited largely by intriguing stories whispered about pretty much as are sex stories.

The considerable number of people who acquire their drug disease from tastes cultivated by narcotized patent medicines, soothing syrups, cough mixtures, "tonics" and what-not, has been materially decreased by the institution of partially effective food and drug laws. A saving characteristic of addicts who are otherwise reasonably sound is, that they have the will to throw off their disease once its dangers are made clear to them and they are endowed with the physical health, the intelligence, and the moral stamina that make complete recovery under wise guidance certain. Thousands are so cured whom no one except the family doctor knows of.

Government duties and responsibilities among these people are quite limited. They are as well handled as are those ill of other diseases by the same doctors and health agencies, and they, their families, and doctors resent meddling interference and more or less official branding by the stupid enforcement of stupid laws.

III

When an otherwise useful, productive, reasonably sound individual who suffers from severe pains and aches of any kind—asthma, neuralgia, gall-stone colic, jangling nerves, or what-not, once experiences the soothing effects of narcotics, another element is introduced into the problem of drug addiction and another group created. There are thousands of such people. They do not want to take drugs and they know the dangers they incur in so doing. But neither do they want suffering, and with them existence becomes a choice of two evils. When the morale becomes sufficiently disturbed by prolonged suffering, many accept the only solace they know—or that anyone else knows—and thereby add to their problem and subsequent misery, knowingly and deliberately. Obviously, persons in this group may be cured of drug addiction only by curing their other infirmities. Obviously, also, it is an individual problem because of the great variety in kind, cause, and curability of physical diseases.

Here again we are confronted with a problem pre-eminently medical. It is first of all the problem of the family doctor and the other agencies of health. The patient should be aided in every way to avail himself of the best that medical science has to offer, and if he succeeds in removing the causes of physical suffering, the cure of the drug addiction becomes a relatively simple matter. If, on the other hand, the physical malady proves incurable, as it may in, let us say, cancer, we are confronted with the most pitiable of all dilemmas. Under our cruelly stupid "standardized" laws the suffering patient has the choice of being officially branded or becoming a criminal and so does the doctor who allows his humanity to induce him to employ approved remedies for the relief of suffering.

Just why so many of the growing group of the men-

tally unstable, ill and defective should resort to drugs is not clear, and will not be fully understood until we have more definite knowledge of the mind in health and disease. We do know that not only drug addicts but many other undesirable types of citizens are recruited in large numbers from mental aberrants. Intelligent students of the subject know also that there is no more chance of curing the drug habits of such people so that they may withstand temptation than there is of curing their other mental failings. A few of these citizens are being cured of their mental infirmities, and when this has been accomplished, cure of their drug disease becomes a relatively simple matter.

Many more of this great group can be made productively useful to society by providing them with such mental splints as intelligent supervision, direction and, where necessary, restriction. The cure of their drug addiction may be accomplished by the simple process of taking them off the drug, *but to keep them cured* requires the constant application of the mental splint throughout life—a discouraging outlook.

It is among this vast group of the mentally unstable and infirm that promoters of alleged "narcotic cures"—and other "cures" as well—reap their harvest: a ghastly business that calls for suppression. This group of unstable citizens, whether drug addicts or not, is much more than a medical problem; it is the problem of society—one of its greatest problems.

The socially and morally infirm and the defectives constitute one major group of unstable citizens, and from it is recruited an amazingly high percentage of drug addicts. Many of these citizens are so maladjusted that society feels obligated to take cognizance of them and often restrict their privileges. To many of them drugs offer their chief solace and the nearest approach to happiness they ever know. To them narcotics are looked upon not as a curse, but as a blessing. To many of the group of social defectives narcotics are used for their bracing effects to enable the subjects to perform deeds of valor or more often of crime. Remorse and frustrated desire hit the social defective hard and often, and once he experiences the temporary relief supplied by a narcotic he becomes as devoted as a neurasthenic to his patent medicine, or a fat woman to obesity cures.

By far the largest group of drug addicts are recruited from those who are handicapped not by one, but several or all, of the defects mentioned in the preceding groups. In one series of 1000 drug addicts systematically studied in the Orient, there were nearly 4000 separate and distinct physical diseases; an average of nearly four ailments of consequence to each person. The proportion of the mentally unstable and defective, as well as the socially maladjusted, was also very great. The few who were physically, mentally, and socially solvent were cured without difficulty, most of them permanently so. Among the others only those were permanently cured of their addiction who were first or at the same time relieved of their other important handicaps. Other careful medical studies reveal similar multiplicity and interdependence of the infirmities of drug addicts.

Thus, the thoughtful student inevitably arrives at the conclusion that the drug addict, in certainly more than 90 per cent of instances, is precisely as curable of his drug addiction as he is of his other and often more serious infirmities; that to attempt to cure his addiction alone is futile, and that were it possible to eliminate addiction, there remains a problem citizen with but one—often the least important—of his troubles removed.

IV

Drug addiction, in its relation to its potential and actual victims, reaches into and affects many other phases of society, which is disturbing clean-minded citizens everywhere and finds expression in all sorts of organizations, moral, social, political, inefficiently milling in disarticulated, ineffective efforts at cures. Laws—national and state—occupy first place among these remedies. None of them is intelligently conceived or effectively enforced. The principal national law, according to the Supreme Court of our country, is a *revenue measure*! It takes toll from vice and proposes to remedy a social evil and cure sick patients by *thou shalt not* edicts calculated to embarrass doctors in their humanitarian work, to tax them

and direct them in the practice of their profession. State laws mostly follow the national lead and some of them go further in the stupid attempt to cure physically, mentally, and socially sick citizens and control those who are licensed to serve them intelligently by restrictive but nevertheless amazingly productive revenue measures; but when it comes to dealing with the really big problems of the manufacture, distribution, and marketing of these dangerous poisons, enthusiasm even for revenue is not so noticeable.

There are honest and dishonest merchants interested in the narcotic drug business. Honest ones are necessary because honest production and marketing of narcotics for necessary purposes is great, world-wide, and must be maintained. With a solace for their miseries, discomforts, and longings before their minds, the patient with his physical pains, the mentally defective with his lopsided ego, the social failure with his longings, the morally submerged with her diseases and her conscience, the would-be criminal with his cowardice, the flotsam and jetsam, the unstable, the weary, remorseful and what-not, all cry out for the relief they believe "drugs" can give them—and never mind the penalty; that, they realize in a vague way, they must pay. So long as these conditions obtain, there will be plenty of men who will risk prisons for their bodies and hell for their souls to supply markets for the profits they may have.

Thus we see briefly that the problem of drug addiction is a many-faceted one, and that its limitation requires battle all along the long and devious road between the poppy fields, the coco groves, the synthesizing laboratories, and consumers—consumers everywhere in all walks of life, in all conditions of physical, mental, social solvency. Any intelligent constructive campaign must recognize that: (a) Certain quantities of these drugs are essential in the relief of suffering and the treatment of disease; (b) drug addicts are of as many varieties as are other individuals, and they may be intelligently succored only as individuals by individualistic methods. As Chairman W. C. Woodward of the American Medical Association Narcotic Committee has so well expressed it: "So far as the narcotic drug supply is concerned, the problem may be national and even international; but so far as the addict is concerned it is individualistic, and we are confronted with the task of mapping out a program that will cover the entire field and yet permit us to handle addicts as persons."

(To be continued in the June issue)

The Life Extension Institute in a recent advertisement states that heart disease, kidney disease, apoplexy, cancer, and tuberculosis are preventable diseases. This statement is partly true, but it is very largely untrue and much harm may result from allowing the public to believe that it is entirely true. Certain types of heart disease such as those due to syphilis are largely preventable, and we wish that we could prevent such types as the rheumatic and the arteriosclerotic, and perhaps occasionally we can, but it is only occasionally. To some degree we may prevent kidney disease, but our knowledge is decidedly too imperfect to allow us to make such conclusive statements in honesty to ourselves and our patients. Given arteriosclerosis, the prevention of which is in the shadowy borderland of knowledge, we can never with certainty predict freedom from the dangers of apoplexy. Early cancer may be cured, but it cannot be prevented. Tuberculosis alone offers some hopes of becoming a preventable disease, although even with this infectious condition our effort will often be met with failure. The health examination is most decidedly a worthy objective, but in all honesty let us recognize its limitations even as we proclaim its virtues.—Boston Medical and Surgical Journal, March 25, 1926.

"From pillar to post," or in cruder vernacular, "passing the buck," has a meaning requiring no explanation. It is associated with the group plan of practice more than when responsibility is shouldered by the individual. This shelving of responsibility is one of the worst features in hospitals. It is bad for the patient, worse for the nurse, inexcusable for the physician, and a wretched quality of medicine.—Hugh Auchincloss (Journal A. M. A.).

"TEN COMMANDMENTS FOR THE 'COMMON DOCTOR'"

Thou shalt have no favorites in newspaper correspondents in order to see thy name in print.

Thou shalt not bow down to graft, nor to the image of gold.

Thou shalt hold thy tongue when sued for malpractice, remembering silence is golden and that thy adversary is after thy gold and will get it if thou art not discreet.

Remember the Sabbath day and keep it holy; six days shalt thou labor and on the seventh also, if thou hast an opportunity to do good or the prospect of a good fee.

Honor the fathers of thy profession, that thy days may be long upon the land and thy usefulness lengthened, through the example and achievements of thy fathers.

Thou shalt not sanction adultery nor produce an abortion.

Thou shalt not steal thy brother's patients nor forgive him when he steals thine.

Thou shalt not kill thy brother's opportunity for earning a living, nor murder his chance of usefulness. He, probably, is thy superior.

Thou shalt not bear false witness against thy neighbor, nor speak evil of his good name. His reputation may be better than thine.

Thou shalt not covet the specialist's fee, nor dispute over a division. Let him have all the money; he may think he earned it. You must be content with glory.

—W. W. Brown, Virginia Medical Monthly.

Chiropractic Not Harmless—A decision by the Supreme Court of Illinois relating to chiropractic has brought out a new answer to the claims of chiropractors and practitioners of similar methods. The defendants in the case argued that practice of chiropractic was "a useful and harmless calling which cannot be regulated by the state." This claim was declared to be so entirely without merit that any discussion of it was unnecessary. The decision went on to state, however, that "if a chiropractor can, by manipulation, move a dislocated vertebra so that the pressure on a nerve can be relieved and paralysis cured, he can by the same process dislocate a vertebra and cause a paralyzed condition. Any method of treating human ailments which, when practiced skilfully, can restore a diseased human body to health is capable of doing great harm when practiced without care or skill. A method of treating human ailments cannot be both useful and harmless. If it is sufficiently efficacious to be useful, it is at the same time capable of producing harmful results." The chiropractor, no less than the physician or anyone else who is to treat the sick, needs to have a sufficient training in the fundamentals of medicine so that he will know at least when his manipulation may be harmful.—Journal A. M. A., February 13, 1926.

Since I began the study of medicine, I have devoted myself chiefly to a careful examination of the most valuable modern treatises. In this particular I differ, I know, from you, who are a profound scholar; but my books have always been few, though I hope well chosen. When I was at the university, a few vials, a skeleton, and an herbal, chiefly formed my library. By following the dictates of common sense, while I practiced at Oxford after taking my bachelor of medicine's degree, instead of stoving up my patients who were ill of the smallpox, as was done by the Galenists of those days, I gave them air and cooling emulsions, and thus rescued more than a hundred from the grave.—The Gold-Headed Cane.

"Maternity Bill will Make a Midwife out of Uncle Sam": The allowance of the \$1,000,000 for hygienic, maternity, and infancy work under the Sheppard-Towner Maternity Act, as proposed in the pending Department of Labor appropriation bill, will make Uncle Sam "the midwife for every expectant mother in the country and the wet nurse for the nation's babies," according to Representative Tucker. "I am against the Government appropriating any money to any function which properly belongs to the individual states."—Chicago Tribune.